

# A Study on Employees' Health and Safety Facilities and their Impact on Employees' Satisfaction in the Construction Firms-Jaffna District

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**Abstract:** Every organization achieves their objectives and goals by using physical and human resources. Human resource is an important resource in the organization and that is difficult to control and maintain by management. Mainly employees are facing health and safety problems in organization. Specially, construction worker face these kind of problems. The employees' health and safety is determined by mainly five variables; unsafe condition, unsafe act, non-violence environment, unstressed work environment and welfare facilities. The researcher derived the research question that is "Are the employee health & safety facilities having an impact on their job satisfaction". To conduct this research, five construction firms in Jaffna district were selected and 200 employees were selected as a sample. The data were collected from selected sample by issuing structured questionnaire. Then these data were presented and analyzed by using statistical techniques (SPSS). Based on the analysis, unsafe condition and unsafe act have strong negative relationship with employees' satisfaction. But, there is very strong positive relationship between health facilities and employees' satisfaction.

**Keywords:** employees' health, safety facilities, employees' satisfaction and construction firm

## 1. Introduction

Human resource is an important resource in the organization and that is difficult to control and maintain by management. Organization gives more priority in handling the human resources effectively and efficiency.

In organization or work place, employees are facing different problems mentally and physically. They are stress, conflicts between employees or management, health and safety problems, less motivation, sexual harassment, bias, personal problems and etc. even employees are facing more problems in work place, employees' health and safety problems have become a big challenge to employers or management in the modern world. Some works are related with more hazardous or dangerous than other work. For example, construction, electricity works, mining, and etc are more hazardous job.

In our research, we had the intention to analyze employees' health and safety and their impact on job satisfaction. For this purpose, we have selected construction industries' workers as population because they are facing more health and safety problems in work place than other employees. Further, employees are working in different levels in construction firms with different risk and uncertainty. Minor workers are facing more health and safety problem compare with administrative employees.

Every country has separate laws and act for occupational health and safety issues. By using law and act, they can easily reduce or minimize the employees' problems. Even though, we can't completely remove those problems from work environment. In Sri Lanka, factories ordinance (1950) deals with this problem and safe employees from health and safety problems. This act was amended in 1976, 1998 and 2000 according to changes in nature.

## Objectives of the study

To study employees' health and safety facilities and their impact on employees' satisfaction in the construction firm in Jaffna district.

## Hypotheses

For the research purpose, Researcher has formulated following hypothesis.

**H1:** High level of unsafe condition & other related factors will result in low level of employees' satisfaction.

**H2:** High level unsafe act will result in low level of employees' satisfaction

**H3:** High level of employee health facilities lead to high level of employees' satisfaction.

## 2. Literature Review

Employees' health and safety is relevant to all industries including construction firm, manufacturing firm and service organization. Every employer tries to achieve good standard on health and safety to achieve their business objectives. Even though, they are facing so many hurdles in achieving it.

Health and safety must be designed in construction firm before, during and after the building phase. If employers identify risk earlier, it is easy to control them. For example, starting control activities before getting to site. Firm can avoid or reduce most of the accident by implementing a good health and safety policy. Health and safety methods help to ensure the construction site has designed; good planning and uses tried and tested safety techniques. Further, it is viewed by employer or organization as a cost controlling method and helps to success of the project.

Employee has right to work in safety work environment. At the same time, he has the right to stop the work if work place

is unsafely. Both employer and employee have responsibility to control risk and manage health and safety environment.

Employee safety includes un-safety conditions and safety act. Unsafe conditions involve the general work environment, equipment, weather as well as activities which employees are involved in. Safety condition should be provided by the organization to employees work properly. One main cause of the safety problem is unsafe conditions.

Safety act of employees is vital to every organization. These unsafe acts may be result of inexperience, deficiency of knowledge and inadequate training, Behavior trend and unwanted attitudes that create safety dilemma or accident in the workplace. Unsafe acts are activities and/or job performance which employees are involved in.

Employee health facilities can be determined by welfare facilities, stress and workplace violence. Working in a construction industry is very difficult. Employees should be given good welfare facilities during working hours that will help to improve employees' satisfaction and their performance. Welfare facilities such as the provision of drinking-water, washing, sanitary and changing accommodation, rest-rooms and shelter, facilities for preparing and eating meals, temporary housing, assistance in transport from place of residence to the work site and back, all help to reduce fatigue and improve workers' health.

Organizational factors, environmental factors and personal factors are sources for stress. Job Stress will give mental and physical effects to employees and that affect productivity and regular activities of organization.

In most of the organization, we can see the workplace violence as a serious issue. Work place violence may occur inside the organization or at site. Conflict is main reason for violence. Employees and employers should take the action to eliminate the violence. That is their one of the duty. Violence will give sever effects to organization as well as employees also. Sometime, effects may be death or losing any part of body. Normally people think that violence is a type of physical assault, even though, work place is a critical problem to employees.

Employee health & Safety has impact on employee satisfaction. Research indicates that, there is a strong relationship between employee health & Safety and satisfaction within the organization. The highly satisfied employees will have better physical and mental health, able to learn new job related tasks more quickly, have fewer on the job related accidents in work place and file fewer grievances.

RiaMardiana Yusuf et al (2012) revealed the relationship between the occupational safety and health and performance with job satisfaction. Further he suggested that equipment and machinery should be arranged according to occupational health and safety regulations that will help to achieve the productivity. T. Robin et al (2000) found that company has performed occupational safety and health that could provide the security and safety to employees and job satisfaction.

According to Y.-H.Huang et al (2004), the main purpose of OHS is preventing the accident in the work place that is related with physical safety further; he explained that OHS increase the employees' satisfaction that is related with mental. So, organizations need to invest in the Human Resource to protect the physical safety and increase the job satisfaction.

B. E. Hayes et al (1998) said that The OSH program contains of job safety regulation, co-worker safety, supervisor safety, and the practice of safety management and the implementation of safety programs that will get to achieve the employees' job satisfaction in the work place.

Seth AyimGyekye (2005) examined the relationship between job satisfaction and worker's compliance with safety management policies and he found the positive relation between those variables, that means, employees who have expressed more satisfaction in the work place, had positive perception of safety climates, further, there was a lower rate of accident because of good safety management policies.

According to Hofmann D et al (1996), the principal guide to safety performance includes the safety climate which gives a proactive management tool. Employees who have negative perception of safety climate incline to engage in unsafe acts which lead to increase the accidents in the work place. Safety climate includes high work load and work pressure.

According to Dr.Gonca KILIÇ and Düzce (2009), job satisfaction is affected by results of physical, chemical, socio-psychological and biological factors. But the most important factors are biological and chemical risk factors that will affect job satisfaction. Further, if the risk level on occupational health and security increase, employee dissatisfaction will also be increased.

Bigos (1986), Greenwood & Wolf (1987) and Holmstrom (1992) found that employee attitudes and their job-related stress are related with the occurrence of accidents, health and job safety. Further, they found, employee job satisfaction helps to eliminate or reduce the physical hazards in the work place.

According to Dr Ruchi Jain & SurinderKaur (2014), Employees of Dominos get satisfaction with some factors. They are work environment, duties and responsibilities of employees, refreshment & leisure facility, complaint handling procedure, entertaining at workplace, health & safety facility. Those factors help to organization to retain the employees in the organization for a long time. However, if those factors are bad in the work environment, that will increase the job dissatisfaction. Further, he revealed that success of the organization depend on whether employees get satisfaction through work environment or not.

Humphrey Danso (2012) found that work provision requirement dimension items induce the employees to get the satisfaction in their work. But most of the employees are dissatisfied with working conditions, environmental factors and job benefits of the job provision condition in Chana. Further, he suggested, management of construction firms

and policy makers should pay more attention on work provision requirement for improving the employees' satisfaction.

Number of researchers found that employees get job and personal satisfaction through maintaining good health and safety environment. According to T.Robin and D.Walker (2000) OHS has been implemented by employer or organization for ensuring employees' security as well as employees' job satisfaction also. Seth AyimGyekye (2005) found the relationship between safety management policies and employees job satisfaction. Relationship was positive. Further, he explained when organization has more safety management policies, they can get satisfied employees and reduce accident rate in the work place.

**Problem Definition**

The research problem can be given in the form of following research question.

- To what extent employee health & safety facilities provided in the construction firm
- What factors cause employee health & safety problem.
- Are the employee health & safety facilities having an impact on their job satisfaction?

**Research Question**

Are the employee health & safety facilities having an impact on their job satisfaction?

**3. Methodology**

**Data collection technique**

In this research, mainly primary data were used. Employees are major primary resource of this research. Mainly this data was collected by issuing to copies of self-administered structured questionnaire to employees of five selected construction firms in Jaffna District. Each sample was selected on the basis of simple random sampling method.

**Method of data Analysis**

To come up with accurate findings for a research, it is essential to do selected study from the data got through the questionnaire. SPSS was used to analyze the data. For this purpose, following statistical analysis methods were used in this research.

- 1) Correlation analysis
- 2) Regression analysis

**4. Results & Discussion**

**Correlation**

Correlation was used to determine whether there is any relationship between employees' health and safety facilities and their satisfaction in construction firms. It includes health and safety dimensions including unsafe act, unsafe condition, un stressed work environment, welfare and non-violence work place. In this analysis, the researcher have found the value of correlation co-efficient using SPSS. The correlation analysis focused on overall relationship between employees' health and safety facilities and their satisfaction in workplace

**Table 1: Coefficient**

Health and safety Factors	Coefficient of determination	R <sup>2</sup>
Unsafe condition	-0.665**	0.445
Unsafe act	-0.587**	0.344
Non- violence	0.804**	0.646
Unstressed work environment	0.861**	0.741
Welfare facilities	0.881**	0.775
Health	0.907**	0.822

Coefficient of correlation for unsafe condition is -0.665. This value shows negative relationship between unsafe condition and employees' satisfaction. However, there is strong negative relationship between two variables with significant.

Coefficient of correlation for unsafe act is -0.587. This value shows negative relationship between unsafe act and employees' satisfaction. Even though, there is strong negative relationship between two variables with significant.

Correlation between non-violence work environment and employees' satisfaction of construction workers is 0.804; it indicates that there is a very strong positive relationship between them.

When employees' satisfaction is correlated with unstressed working condition, the correlation is 0.861. As correlation is positive, there is a positive relationship between unstressed working condition and employees' satisfaction. Further, as coefficient of correlation is greater than 0.7, there is very strong positive relationship between variables.

When employees' satisfaction is correlated with welfare facilities, the correlation is 0.881. As correlation is positive, there is a positive relationship between unstressed welfare facilities and employees' satisfaction. Further, as coefficient of correlation is greater than 0.7, there is very strong positive relationship between welfare facilities and employees' satisfaction.

Pearson's r is 0.907. This number is very close to 1. For this reason, we can conclude that there is a strong relationship between health facilities and employees satisfaction. At the same time, there is positive relationship also. However, we cannot make any other conclusions about this relationship, based on this number.

**Regression**

**Relationship between unsafe condition and employees' satisfaction**

**Table 2: Model summary-unsafe condition and employees' satisfaction**

<i>Model Summary</i>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.665 <sup>a</sup>	0.442	0.44	0.56871
a. Predictors: (Constant), unsafe condition				

Regarding to the above model summery, R square value is 0.442. R square states to what extent unsafe condition determines employees' satisfaction. R square value is also

low. It indicates that only about 44.2% is explained by the variation in the score of unsafe condition. The remaining is unexplained.

**Table 3:** ANOVA-unsafe condition and employees' satisfaction

ANOVA <sup>b</sup>						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	50.798	1	50.798	157.059	.000a
	Residual	64.04	198	0.323		
	Total	114.838	199			
a. Predictors: (Constant), unsafe condition			b. Dependent Variable: satisfaction			

The above table is used to find out the overall fitness of unsafe condition and employees' satisfaction. F value indicates whether this model has overall significant or not. Based on the above result F value is 157.059 and its significant is at 0.000 at 0.01 significant levels. So, unsafe conditions are the significant for employees' satisfaction.

**Table 4:** Coefficients<sup>a</sup>-unsafe condition and employees' satisfaction

Coefficients <sup>a</sup>							
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
1	(Constant)	4.511	0.118		38.15	0	
	Unsafe condition	-0.516	0.041	-0.665	-12.532	0	
a. Dependent Variable:		satisfaction					

According to the above table, the relationship between the two variables, that are unsafe condition as an independent variable and employees' satisfaction as a dependent variable, is negative and their coefficient is -0.516. The value of t-statistic of the above output is t = -12.532 with a significance of 0.000. Since the significance is less than 0.01, it can be said that at 1% significance level, negative linear relationship exists between unsafe conditions and employees' satisfaction.

Regression equation for unsafe conditions and employees' satisfaction is:

$$\text{Employees' satisfaction} = 4.511 - 0.516 * \text{unsafe conditions}$$

From the linear regression, analysis can be concluded that unsafe condition contributed towards employees' satisfaction by 44.2% among construction firm.

**Relationship between unsafe act and employees' satisfaction**

**Table 5:** Model summary-unsafe Act and employees' satisfaction

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587 <sup>a</sup>	0.344	0.341	0.61672
a. Predictors: (Constant), un safe act				

Model summary helps to us to measure overall model fit and to predict reading score. R value is a measure of how well our predators predict outcome. Even though, adjusted R square gives more accurate value than R. 34.1% of the variance in employees' satisfaction can be explained by unsafe act. Rest 65.9% is explained by other factors. R squared should be a range 0 and 1.

**Table 6:** ANOVA-unsafe Act and employees' satisfaction

ANOVA <sup>b</sup>						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	39.529	1	39.529	103.93	.000 <sup>a</sup>
	Residual	75.308	198	0.38		
	Total	114.838	199			
a. Predictors: (Constant), unsafe act			b. Dependent variable: satisfaction			

F-test outcome also help to know absolute fit of the model to the data. Here, F-test outcome is highly significant (less than 0.001). So, this model fits with this data.

**Table 7:** Coefficients<sup>a</sup>-unsafe Act and employees' satisfaction

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.335	0.127		34.096	0
	Unsafe act	-0.456	0.045	-0.587	-10.195	0
a. Dependent Variable:		satisfaction				

Unstandardized coefficient gives us the value of constant a, which is the interpret point or value of the X, if Y is zero. Changes in b value depends on X value changes. If unsafe act factors change by 1 unit, satisfaction of employees will be changed by 0.456. Further, there is a negative relationship between dependent and independent variables.

Regression equation for unsafe act and employees' satisfaction is:

$$\text{Employees' satisfaction} = 4.335 - 0.456 * \text{unsafe Act}$$

From the linear regression, analysis can be concluded that unsafe Act contributed towards employees' satisfaction by 45.6% among construction firm.

**Table 8:** Model summary-health facilities and employees' satisfaction

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.907 <sup>a</sup>	0.822	0.821	0.32123
a. Predictors: (Constant), health facilities				

**Relationship between health facilities and employees' satisfaction**

Model summary provides information about the regression line ability to account for the total variation in dependent variable. As can be seen from above table, r<sup>2</sup> value is 0.822 which explain that 82.2% percent of total variance in employees' satisfaction has been explained. R value

represents the simple correlation and which indicates a high degree of correlation.

**Table 9:** ANOVA–health facilities and employees’ satisfaction

ANOVA <sup>b</sup>						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	94.407	1	94.407	914.909	.000 <sup>a</sup>
	Residual	20.431	198	0.103		
	Total	114.838	199			
a. Predictors: (Constant), health facilities						
b. Dependent Variable: satisfaction						

Above table indicates that regression model predicts the dependent variable significantly well. Here p value is less than 0.0005, which indicate that it is a good fit for data.

**Table 10:** Coefficients–health facilities and employees’ satisfaction

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.364	0.094		3.874	0
	health	0.89	0.029	0.907		
a. Dependent Variable: satisfaction						

Above table helps us to give necessary information to predict health and employees’ satisfaction as well as determine whether health facilities contribute statistically and significantly to the model. Constant value is 0.64 that means, this value is not affected by health factor changes. If health factor is changed by one unit, satisfaction will be changed by 0.89 units. Based on above information, we can get following regression line.

$$\text{Employees' satisfaction} = 0.364 + 0.89 * \text{health}$$

**Hypotheses Testing**

Hypothesis testing or significance testing is a technique for testing a claim or hypothesis about a parameter in a population, using data measured in a sample. Based on our research problem, we have already formulated hypothesis. Hypothesis test helps to identify whether formulated hypotheses are accepted or rejected.

**H1:** High level of unsafe condition & other related factors will result in low level of employee satisfaction.

According to the F-test, this hypothesis is accepted at 1% significance level. It implies that there is a significant relationship between unsafe condition and employees’ satisfaction.

Correlation analysis proves that there is a strong negative relationship ( $R^2=0.445$ ) between unsafe condition and employees’ satisfaction. Further regression line for unsafe condition and employees’ satisfaction ( $Y=4.511-0.516X$ ) also indicates that there is a negative relationship between unsafe condition and employees’ satisfaction. Therefore, this hypothesis was accepted.

**H2:** High level unsafe act will result in low level of employee satisfaction

This hypothesis is accepted at 1% significance level based on F-test. It implies that there is a significant relationship between unsafe act and employees’ satisfaction.

Correlation analysis proves that there is a strong negative relationship ( $R^2=0.344$ ) between unsafe act and employees’ satisfaction. Further regression line for unsafe act and employees’ satisfaction ( $Y=4.335-0.456X$ ) also showed that there is a negative relationship between unsafe act and employees’ satisfaction. Therefore, this hypothesis was accepted by researcher.

**H3:** High level of employee health facilities lead to high level of employee satisfaction.

According to the F-test, this hypothesis is accepted at 1% significance level. It implies that there is a significant relationship between health facilities and employees’ satisfaction.

Correlation analysis proves that there is a very strong positive relationship ( $R^2=0.822$ ) between health facilities and employees’ satisfaction. Further regression line health facilities and employees’ satisfaction ( $Y=0.364+0.89X$ ) also indicates there is a positive relationship. Hence, this hypothesis was also accepted.

**5. Conclusion**

Most of the employees who are working in construction industries, face health and safety problem. Though, organization has taken necessary action to reduce or eliminate those problems. According to findings, there is a negative relationship between unsafe act and unsafe condition and employees’ satisfaction. Further, there is positive relationship between health facilities and employees’ satisfaction. In other word, if the unsafe act and condition factors increase, employees’ job satisfaction will be decreased and vice versa. If employees’ health facilities provided by organization increase, employees’ satisfaction also will be increased. So, organization needs to consider employees’ health and safety facilities to achieve their objective effectively and efficiency.

In employees’ point of view, safety climate is a proactive management tool. Work overload, work related pressure and unsafely act are some negative opinion of safety.

**6. Future Scope**

This study was designed for identifying the relationship between employees’ health and safety and employees’ satisfaction and further, aimed at impact of employees’ satisfaction because of employees’ health and safety. Unsafe condition, unsafe act, non-violence factors, unstressed work environment and welfare facilities were considered as in dependable variables by researcher. Even though, other factors, such as employer employee relationship, salary, incentives, leaves and etc., affect the employees’ satisfaction. So, we can’t conclude that only health and safety related affect satisfaction of employees. So, further researchers have to consider other factors than considered factors.

For this research purpose, five firms in Jaffna district have been selected as sample. Though, there are lots of construction firms in Jaffna district including registered and unregistered firms. So, future researchers can increase the sample size also. Then, that will give clear and stable conclusion. Further, only private firms have been considered in this research. We can include public sector construction firms and compare them with public sectors.

Researcher has considered 200 samples only. Based on the small percentage of sample we cannot come up with final decision. If future researchers increase the sample size, it may give better insight compare with these findings.

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